

Claims

1. (Currently Amended) A method performed by a computer of processing digital images, the method comprising:

transferring a first digital image file containing a digital image from a first digital image data source device to a target computer having an application programming interface that facilitates transfer of digital image files from digital image data source devices to the target computer;

at the target computer, analyzing image data from the first digital image file; and

at the target computer, adjusting the image data from the first digital image file based at least in part on the analysis of the image data,

wherein the analyzing and the adjusting are performed automatically at the target computer, and wherein the analyzing and the adjusting are initiated by the transferring of the first digital image file from the first digital image data source device to the target computer.

2. (Currently Amended) The method of claim 1 wherein the first digital image data source device is a device selected from a group consisting of: digital camera, scanner, digital video camera, mass-storage device.

3. (Previously Presented) The method of claim 1 wherein the transferring is initiated at a source location for the digital image.

4. (Previously Presented) The method of claim 1 wherein the transferring is initiated at a target location for the digital image.

5. (Previously Presented) The method of claim 1 wherein the transferring is performed via a wireless communication medium.

6. (Previously Presented) The method of claim 1 wherein the transferring is performed via a network connection.

7. (Currently Amended) The method of claim 1 further comprising analyzing non-image information from the first digital image file;

wherein the adjusting is based at least in part on the analysis of the non-image information.

8. (Original) The method of claim 7 wherein the non-image information comprises one or more of the following: flash information, focal length, shutter speed, camera model information, aperture setting, date/time information.

9. (Original) The method of claim 1 wherein the image data comprises pixel data for the image.

10. (Original) The method of claim 1 further comprising generating image characteristic data prior to adjusting the image data;

wherein the adjusting is based at least in part on the image characteristic data.

11. (Original) The method of claim 10 wherein the image characteristic data comprises image orientation data, and wherein the adjusting comprises adjusting orientation of the image based on the image orientation data.

12. (Original) The method of claim 10 wherein the image characteristic data comprises one or more of the following: image orientation data, red-eye detection data, blur data, color balance data, exposure data, noise data.

13. (Currently Amended) The method of claim 1 further comprising:

generating metadata corresponding to the adjusting; and

storing the metadata corresponding to the adjusting in the first digital image file;

wherein the storing facilitates preservation of an original version of the digital image.

14. (Currently Amended) The method of claim 13 wherein the transferring is performed in response to a request from a user-mode application, and further comprising:
providing the first digital image file with the metadata to the user-mode application.

15. (Original) The method of claim 1 wherein automatic performance of the analyzing and the adjusting is selectively enabled or disabled by a user.

16. (Currently Amended) The method of claim 1 wherein the first digital image file is a compressed digital image file.

17. (Canceled)

18. (Currently Amended) The method of claim 1 wherein the digital image file is in an EXIF format.

19. (Canceled)

20. (Original) The method of claim 1 wherein the acts are performed in an operating system environment as a feature of the operating system environment.

21. (Original) The method of claim 20 wherein the operating system environment is a managed code environment.

22. (Currently Amended) The method of claim 1 wherein the acts-analyzing and the adjusting are performed in a background service of an operating system environment.

23. (Previously Presented) The method of claim 1 further comprising:
storing the adjusted image data on a computer-readable medium at the target computer.

24. (Original) A computer-readable medium having stored thereon computer-executable instructions for causing a computer to perform the method of claim 1.

25. (Currently Amended) A method performed by a computer of processing digital images, the method comprising:

~~upon transfer of a digital image file containing a digital image from a digital image data source device to a target computer;~~

~~responsive to the a transfer of the a first digital image file from a first digital image data source device to a target computer,~~ analyzing image data from the digital image file at the target computer;

~~prior to receiving any user input relating to the analyzing, adjusting the image data from the first digital image file at the target computer based at least in part on the analysis of the image data;~~
and

generating metadata corresponding to the adjusting;

~~wherein the target computer has an interface that allows transfer of digital image files from multiple different types of digital image data source devices to the target computer.~~

26. (Currently Amended) The method of claim 25 further comprising:

storing the metadata corresponding to the adjusting in the first digital image file;

wherein the storing facilitates reversal of the adjusting.

27. (Currently Amended) The method of claim 25 further comprising:

storing the metadata corresponding to the adjusting in a second image file;

wherein the second image file comprises a second version of the first digital image file.

28. (Currently Amended) A computer system comprising:

~~a communication connection device at a target computer for acquiring one or more digital images from a digital image source device;~~

~~an image acquisition application programming interface at the target computer for acquiring one or more digital image files containing one or more digital images from a digital image source~~

device:

a memory at the target computer for storing the one or more acquired digital image data files containing the one or more acquired digital images;

an image analysis software module at the target computer for analyzing the one or more acquired digital images at image acquisition time, wherein the analyzing is initiated by the acquiring;

an image adjustment software module at the target computer for adjusting the one or more acquired digital images at image acquisition time, wherein the adjusting is based at least in part on the analyzing; and

at least one processor at the target computer.

29. (Original) The computer system of claim 28 further comprising an image output device for visually displaying digital images.

30. (Original) The computer system of claim 28 wherein the image analysis software module and the image adjustment software module are in an image acquisition service of an operating system.

31. (Original) The computer system of claim 28 further comprising:

an image decoder for decoding compressed digital image data; and
an image encoder for encoding adjusted digital image data.

32. (Previously Presented) The computer system of claim 28 wherein the image adjustment software module comprises one or more processing filters for adjusting the one or more acquired digital images.

33. (Previously Presented) The computer system of claim 28 wherein the image adjustment software module comprises an extensible software architecture operable to allow customization of the image adjustment software module, wherein the extensible software architecture comprises one or more processing filters for adjusting the one or more acquired digital images, wherein each of the one or more processing filters encapsulates an image adjustment function.

34. (Original) The computer image acquisition system of claim 33 wherein the customization comprises adding, removing or reordering processing filters in the image adjustment software module.

35. (Previously Presented) The computer image acquisition system of claim 28 wherein the image adjustment software module generates metadata corresponding to adjustments of the one or more acquired digital images, and further comprising:

a metadata/image integrator for integrating the metadata into a digital image file containing adjusted digital image data.

36. (Currently Amended) A software system for processing digital images, the software system comprising:

at a target computer:

means for receiving a digital image file comprising a digital image from a digital image source device;

means for analyzing digital image data ~~for in~~ the received digital image file, wherein the means for analyzing automatically analyzes the digital image data responsive to the ~~receiving~~received digital image file; and

means for adjusting the ~~received~~ digital image based on the automatic analysis of the digital image data, wherein the means for adjusting automatically adjusts the digital image data responsive to the automatic analysis.

37. (Currently Amended) The software system of claim 36 wherein transfer of the digital image file from the digital image source device to the target computer is initiated by device event data originating at ~~a source location for the digital image~~ source device.

38. (Currently Amended) The software system of claim 36 wherein transfer of the digital image file from the digital image source device to the target computer is initiated by a request originating at ~~a target location for the digital image~~ the target computer.

39. (Currently Amended) The software system of claim 36 wherein the digital image file is received via a wireless communication medium.

40. (Currently Amended) The software system of claim 36 wherein the digital image file is received via a network connection.

41. (Currently Amended) The software system of claim 36 wherein the means for analyzing further comprises means for analyzing non-image information from the received digital image file.

42. (Original) The software system of claim 41 wherein the non-image information comprises one or more of the following: flash information, focal length, shutter speed, camera model information, aperture setting, date/time information.

43. (Original) The software system of claim 36 wherein the image data comprises pixel data for the image.

44. (Original) The software system of claim 36 further comprising means for generating image characteristic data prior to adjusting the image data.

45. (Original) The software system of claim 44 wherein the image characteristic data comprises one or more of the following: image orientation data, red-eye detection data, blur data, color balance data, exposure data, noise data.

46. (Original) The software system of claim 36 further comprising:
means for generating metadata corresponding to image adjustments; and
means for storing the metadata corresponding to image adjustments in a digital image file containing an adjusted version of the digital image;
wherein the means for storing facilitates preservation of an original version of the digital image.

47. (Original) The software system of claim 36 further comprising means for selectively enabling or disabling the means for adjusting.

48. (Original) The software system of claim 36 wherein the software system is implemented as a feature of an operating system environment.

49. (Original) The software system of claim 48 wherein the operating system environment is a managed code environment.

50. (Canceled)

51. (Currently Amended) A method for developing computer software for a digital image analysis and adjustment system, the method comprising:

receiving a software platform for analyzing and adjusting digital images at a target computer responsive to receiving one or more files containing the digital images at the target computer from a source device, wherein the software platform comprises a customizable software architecture for adjusting digital image data based on analysis of digital image data; and

creating a custom image adjustment module compatible with the customizable software architecture and operable to add image adjustment functionality to the digital image analysis and adjustment system.

52. (Currently Amended) A software system providing digital image processing functionality, the software system comprising:

a customizable software architecture for adjusting digital image data at a target computer based on analysis performed at the target computer, wherein the adjusting and the analysis of the digital image data is responsive to acquisition of one or more files containing digital images by the target computer from a digital image source device, wherein the customizable software architecture is capable of operably coupling one or more image adjustment modules encapsulating image adjustment functions to one or more image analysis modules;

wherein the functionality of the software system is capable of being customized by altering an arrangement of image adjustment modules operably coupled to the one or more image analysis modules.

53. (Original) The software system of claim 52 wherein the altering comprises adding image adjustment modules encapsulating image adjustment functions to the software system.

54. (Original) The software system of claim 52 wherein the altering comprises changing the functional order of image adjustment modules operably coupled to one another in the software system.

55. (Original) A computer-readable medium having computer-executable code for the software system of claim 52.

56. (New) The method of claim 1 wherein the application programming interface comprises a member function that is called to retrieve the first digital image file from the first digital image data source device.

57. (New) The method of claim 25 wherein the interface allows transfer of digital image files from digital image data source devices including: digital cameras, scanners, digital video cameras, mass-storage devices.

58. (New) The software system of claim 36 wherein the target computer is a PC and wherein the digital image source device is a digital camera separate from and connectable to the PC.